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REGULATORY FOCUS MODERATES THE EFFECTS OF FEEDBACK VALENCE ON RESOURCE ALLOCATION

BENLİK DÜZENLEME ODAĞININ GERİBİLDİRİMİN KAYNAK KULLANIMI ÜZERİNDEKİ ETKİSİNE DÜZENLEYİCİ ROLÜ

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Abstract

Previous studies have mainly examined the effect of regulatory fit in the context of single goal-pursuit. However, the dynamics for multiple goal-pursuits have been left largely unexamined. Therefore, two studies were conducted to explore the role of regulatory fit under the different goal-pursuit conditions. First study, using bogus feedback following regulatory orientation framing for solving anagram tasks, revealed that the fit between prevention focus and negative feedback increased motivation in the post-feedback session. In the second study, participants allocated limited time between the two imaginary goals following regulatory orientation priming. Results showed that participants allocated higher levels of resources when they experience regulatory fit. Results highlighted the importance of the fit experience on resource allocation in the multiple-goal context.

Keywords: Regulatory fit, multiple goal-pursuit, dynamic self-regulation, feedback valence

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Alan yazındaki çalışmalar düzenleyici uyumun etkilerini sadece tek bir hedefin izlendiği koşullarda incelemiştir. Bu çalışmalarda, çoklu hedeflerin izlendiği durumlara özgü dinamikler genel olarak göz ardı edilmiştir. Bu sebeple, düzenleyici uyumun etkilerini ortaya çıkarmak için farklı hedef izlenme ortamlarında iki çalışma yürütülmüştür. Birinci çalışmada, düzenleyici odak manipülasyonu ile verilen anagram çözme görevinde katılımcılara sahte geribildirim verilmiştir. Bulgular, kaçınmacı odak ile olumsuz geribildirim arasındaki uyumun, geribildirim sonrası performansı arttırdığını göstermiştir. İkinci çalışmada, düzenleyici odak manipülasyonunu takiben, katılımcılar hayali hedeflere ulaşmak üzere sınırlı kaynaklarını iki hedef üzerinde bölüştürmüştür. Sonuçlar, katılımcıların düzenleyici uyum deneyimledikleri hedeflere daha çok kaynak ayırdıklarını göstermiştir. Sonuçlar genel olarak, uyum deneyiminin çoklu hedeflere ulaşmak için kullanılan kaynaklar üzerindeki etkisine işaret etmektedir.

Anahtar Kelimeler: Düzenleyici uyum, çoklu hedef izleme, dinamik benlik düzenleme, geribildirimin yönü.

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Introduction

In our daily lives, we have to pursue multiple goals almost all of the time. Having a nice dinner versus eating only vegetable salad to keep shape is a typical example of multiple goal situations. In many cases, following a goal requires moving away from the other since they are practically conflicting. That is, they are in opposing positions representing 'either-or' choice situation as in the nice dinner vs. salad example. Some other goals, however, do not have to be in the opposite end-states though time and/or resource limitations may force individuals to heavily invest on one of the competing goals. Writing an article and preparing a course represents a good example of this situation.

Individuals have to distribute their efforts on multiple active goals for increasing the probability of the attainment of their goals (Carver & Scheier, 1999). Previous research on motivation and goal-pursuit has explored the potentially harmful effects of alternative goals on a focal goal by creating a competitive atmosphere for the resources (e.g., Miller, 1944; Emmons & King, 1988). The main perspective behind this line of research is the limited cognitive capacity of individuals (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000). That is, our limited ability to focus on multiple goals leads to the selection of one goal and the termination of the other. However, as in real-life conditions, multi-goal situations include a number of strategies beyond simply abandoning one of the goals. In conclusion, it is imperative to explore the dynamics of goal pursuit to better understand how we pursue multiple goals under competing situations dictated by limited capacity.

Therefore, the purpose of the current study is to examine the joint role of feedback valence which provides information on goal-pursuit by conveying a message about the goal-progress and self- regulatory orientations (i.e., promotion and prevention focus) in the context of multiple goal pursuit.

In the current study, a moderating factor is proposed to shed light on the controversial claims regarding the effects of feedback in the process of multiple goal-pursuit. As a goal-pursuit process approach, Higgins' (2000) regulatory fit theory (RFT) basically proposes that positive and negative feedback interacts differently with the individuals' self-regulatory orientations (i.e., promotion and prevention) which are defined as the preferred actions and strategies during the goal-pursuit process. Thus, beyond the effects of feedback per se, its 'fit' with the individuals' self-regulatory orientation is argued to influence the goal-pursuit process. As a result, according to RFT, we claim that both positive and negative feedback can lead to the allocation of resources either on the focal goal or the alternative goal depending on their (non) fit with the promotion and prevention self-regulatory orientations.

Dynamics of Multiple Goal-pursuit

Goal conflict has a long and rich history in social psychology (see Miller, 1944; Lewin, 1951, Emmons & King, 1988). Goals systems theory has a similar perspective for multiple goal-pursuit (Kruglanski, Shah, Fishbach, Friedman, Chun, & Sleeth-Keppler, 2002), yet it focused on goal competition instead of direct conflict between goals. In this theory, goals are competing for a 'constant sum' of limited resources and as the engagement to a goal increases, allocated resources to other goals decreases or totally fades away.

Research on goal management strategies under goal competition have been defined various strategies such as goal abandonment (Heckhausen, Wrosch, & Schulz, 2010), goal shifting (e.g., Liberman, Förster, & Higgins, 2007), and goal balancing (e.g., Carver, 2004; Higgins, 1997; Shah, 2005). Underlying assumption of these strategies is that managing the effort and resource between goals are heavily determined by bottom-up process (Carver,

2004). Accordingly, it is proposed that individuals seek information about the goal progress to revise their efforts.

Previous research has elaborated several factors affecting the effort or resource allocation on multiple goals. Considerable attention has been devoted to understanding the effect of feedback on multiple goal-pursuit as a bottom-up process. Both positive and negative feedback received during the goal-pursuit is argued to be one of the most critical factors. Since feedback provides a reference for a comparison between the current state and the desired end-state, individuals can derive information on the goal progress. Yet, deciding the goals to be selected or weighted among others in response to feedback is a controversial issue requiring further clarification.

Basically, researchers distinguish between positive and negative feedback (Fishbach & Dhar, 2005; Fishbach, Zhang, & Koo, 2009; Koo & Fishbach, 2008), though the effect of feedback has been largely left unclear. For instance, Kluger and De Nisi (1996) reported in their meta-analysis that the effects of feedback per se and the effect of feedback valence on motivation were complex (see also Harkin et al., 2016). In the motivation-goal literature, two main perspectives have been used to study the effects of feedback on goal-pursuit. Attitude researchers beginning from Festinger (1957), claim that positive feedback increases resource allocation via increased expectancy and value of attainment. Instead, negative feedback decreases resource allocation by lowering the expectancy of goal attainment (Fishbach & Finkelstein, 2012). Individuals' desire to be consistent in their behaviors lies behind this proposition. Thus, if an action results in positive outcomes, selecting similar subsequent actions become more likely. Some of the goal-pursuit researchers also hold this perspective. For instance, Bandura (1991) claimed that while positive feedback increases self-efficacy, which in turn leads to increased motivation, negative feedback decreases the sense of self-efficacy which in turn decreases motivation. In supporting this proposition, it was found that employees can be motivated more on their jobs as a result of increased self-efficacy following a positive feedback (Audia, Locke, & Smith, 2000).

Discrepancy reduction models focusing on the gap between current state and end-state take a different perspective on the effects of feedback valence. For instance, as a discrepancy reduction approach, cybernetic model for self-regulation claims that positive feedback would lead to 'coasting' (decreasing effort and/or motivation on focal goal to pursue other goals) to allocate resources to other goals since positive feedback conveys a message indicating a certain amount of progress. Conversely, negative feedback signals that there is a relatively big gap between the end-state and current state indicating lack of progress, which in turn, leads to an increase in motivation (Carver & Scheier, 1998). Only an indirect empirical support has been provided for the premises of the cybernetic model since studies investigating the feedback effects have been commonly conducted in the consecutive goals. Pomerantz and Trope (1998) found that following a successful experience as compared to negative feedback, participants wanted to learn more about their weaknesses in another context.

The Present Study

Past research on multiple goal-pursuit largely depends on the theoretical refinements of the previous motivation-goal theories. These theories have provided a common theoretical background for the research on goal-pursuit within the cognitive perspective. Although it has some limitations, the basic premises of single goal-pursuit theories have the potential to shed light on the dynamics of self-regulation under multiple goal-pursuit conditions. Higgins' (2000) RFT is one of the most recent theories within this line of research.

Higgins (2000) proposed RFT to better understand the dynamics underlying motivations and decision making by extending and reinterpreting the hierarchical structure

assumed within regulatory focus theory (Higgins, 1996). RFT asserts that compatibility between the motivational orientation (i.e., promotion and prevention foci) and the manner of goal pursuit is assumed to affect goal process beyond their unique contributions. In other words, those with the promotion are usually more concerned with achieving gains (e.g., positive feedback) in a given task, and those with prevention focus is usually concerned with avoiding losses (e.g., negative feedback). As a result, if an individual's chronic (dispositional) regulatory focus is compatible with the requirement of the task or the means/manners for attaining a goal, then s/he experiences a regulatory fit characterized by 'feeling right' or 'I am doing it in a proper way' experience. Furthermore, Higgins (2000) proposed that fit leads to (a) intensification of the feelings for both positive and negative ones in response to a desirable and undesirable choice, respectively, (b) assigning higher value to the chosen object, (c) more positive experience for evaluations and decisions, and (d) higher motivational intensity, above and beyond the unique effects of self-regulatory orientation and means/manners.

According to RFT, self-regulatory orientations are assumed to respond to feedback in different ways. Accordingly, RFT proposes that the success feedback fits with the promotion and failure feedback fits with the prevention. As a result of this fit experience, motivation and persistence are supposed to be higher as compared to failure in promotion and success in prevention (Idson, Liberman, & Higgins, 2000). Few stuides provided support for those claims (Förster, Grant, Idson, & Higgins, 2001; Idson & Higgins, 2000; Van Dijk & Kluger, 2004), some other studies provided partial support (Shu & lam, 2011) and some other studies revealed contradictory results (Scholer, Stroessner, & Higgins, 2010).

Extending the proposed fit effects for single goal-pursuit to the multiple goal- pursuit context can have critical implications in understanding the real-life goal-directed behavior which is characterized by pursuing multiple goals in most situations. Successful self-regulation in such a context requires balancing the effort while pursuing different goals (Shah & Kruglanski, 2008). Nonetheless, cognitive resources are not unlimited and could be depleted when regulatory demands are high. Therefore, it is plausible to suggest that adjusting goal-directed action can be a useful strategy, especially when pursuing multiple-goals.

How does "the fit experience" occur in a multiple-goal pursuit context? Only a few studies examined the effect of regulatory fit in the multiple-goal pursuit contexts. However, almost all of these previous studies have focused on the long-term important goals versus short-term tempting goals, rather than focusing on the same level of broader goals competing for the resources (Dholakia, Gopinath, Bagozzi, & Nataraajan, 2006; Freitas, Liberman, & Higgins, 2002; Hong & Lee, 2008).

In the current study, it is specifically aimed to explore how regulatory fit effects primed via feedback influence resource allocation. Considering the mixed findings, the first study aimed to test if the previous findings on the fit effect could be replicated in a different sample in the Turkish cultural context. It was expected that positive feedback fits better with promotion focus and negative feedback fits better with a prevention focus, as originally proposed in RFT. Simply, participants are expected to allocate more resource (i.e., time) under fit conditions. In order to test this (replication) hypothesis, an anagram-solving task used in the previous studies (Förster et al., 2001; Idson & Higgins, 2000) was employed in the first study.

In the second study, the effects of fit and non-fit under the multiple goal-pursuit conditions were tested for the first time. In testing of these hypotheses, the second study was conducted using an experimentally induced regulatory focus, and then, a scenario in which imagination of resource allocation is required. It is expected that under non-fit (conditions

typified by less intense motivational state), individuals would allocate more resources to the alternative goal than the fit conditions. Specifically, borrowing from the proposition of cybernetic model on allocating resources to alternative goal following positive feedback and allocating resources on focal goal following negative feedback, it is assumed that those with prevention focus would allocate more resources to the alternative goal following positive feedback whereas they would allocate more resources to the focal goal following negative feedback. Furthermore, under fit conditions (characterized by strong motivational pull), individuals would allocate more resources to the focal goal. Specifically, in line with the propositions of attitude research on allocating resources to focal goal following positive feedback, it is expected that those with promotion focus would allocate more resources to the focal goal following positive feedback while they would allocate more resources to the alternative goal following negative feedback.

Study 1

The first study aims to replicate the findings of feedback effects on different regulatory foci on a different sample by using a similar experimental procedure used in the previous studies (e.g., Förster et al., 2001).

In general, participants were framed with either promotion or prevention focus at the beginning of the experimental anagram solving task, and they received either bogus positive or negative feedback in the middle of the session. The degree of persistence on the task was used as a classical indictor of motivation in the previous goal pursuit research. This was described as the amount of time individuals prefer to spend on a given task (Weiner, 1972).

A pilot study was conducted to choose anagrams for the study. Besides, it was aimed to set a genuine cut-off for bogus feedback by testing subjective experience in a similar sample with the original study (see Jarzebowski, Palermo, & van de Berg, 2012). Twenty commonly used anagrams were selected from web based anagram games; each has at least two solutions. These anagrams task were applied to 24 participants (M_{age} = 23.27, *SD* = 2.87). They were asked to solve anagrams by using all of the words presented. After the anagram solving, participants were asked to indicate the percentage of their performance considering all of the possible solutions.

Six anagrams were selected with moderate to high standard deviations for the critical post-feedback step of the primary study. Mean percentage of the success was 70.25 (*SD* = 17.92). Therefore, 70% was decided to use as cut-off for bogus feedback in the main study.

Method

Participants

Undergraduate students (*N*=100) attending various psychology courses were recruited. Of the participants, 48 were female (48%) and 52 were male (52%). There was no gender difference on the major variables (all *t*'s < 1.57, ns.). The average age of the participants was 21.68 (*SD* = 1.79, Range = 18-31).

Procedure

The study employed a 2 (promotion; prevention focus framing) X 2 (positive; negative bogus feedback) between subjects design on time spent. Main dependent variable for motivation was the time spent for the second set of anagrams (post-feedback) and the pre-feedback performance was used as a control (base) measure.

When participants arrived at the laboratory they were told that they were going to attend a cognitive performance test by completing a few scales and solve anagrams.

Participants began by filling a mood measure on a 7-point Likert scale (Förster et al., 2001). Questions included two positive promotion related (happy, content) and two positive prevention-related (calm, relaxed), and two negative promotion-related (discouraged, disappointed) and two negative prevention-related emotions (tense, worried). Then one of two promotion or prevention framing instructions were given.

In the promotion framing, participants were told "you will get one-course credit for the completed anagrams. We want you to pay attention to the task, so if you perform at the % 70 level or better you will earn an extra credit, but if you do not perform at the % 70 level or better, you will not earn an extra credit." In the prevention, framing condition participants were instructed "you will get two-course credits for the completed anagrams. We want you to pay attention to the task, so if you perform below the % 70 level, you will lose a credit, but if you do not perform below the % 70 level, you will not lose a credit." Participants were also informed that % 70 percent refers to the portion of words generated against all of the possible solutions.

After half of the anagrams were solved, participants received either success feedback or failure feedback. All of the participants were led to believe that the computer calculates the percentage of words entered. Then, participants completed a mood questionnaire again. Following the questionnaire, participants solved the second set of anagrams with the same instructions. For manipulation checks, participants indicated the sign of the feedback (-5 = negative; 5 =positive), and goal type in terms of their ideal or ought qualities ("Some goals involve pursuing something we wish, whereas others involve pursuing something we have to." "How would you describe your goal for task?) on a 10-point Likert scale (1= ideal; 10 = ought). All manipulation check questions revealed nonsignificant results on dependent variable ($t < 1.96$).

Participants' acceptance of feedback was checked to test whether participants perceive feedback as genuine (Nease, Mudgett, & Quinones, 1999). After the study, funneled debriefing procedure was used whether participants were aware of the nature of the study (Chartrand & Bargh, 1996).

Results and Discussion

Before the main analyses, conventional data screening procedures were conducted. Response durations for anagrams were significantly skewed. Indeed, the response duration in such studies are skewed by its nature, hence, square root transformations were made for each response. Means and standard deviations of the study variables were presented in Table 1.

Table 1. Means and Standard Deviations for Transformed Response Times

Frame	Promotion		Prevention	
		D		*D*
Feedback				
Positive	.48	.62	.50	.64
Negative	.38	.43	.55	.28

Multilevel modeling (MLM) approach was used to test the hypotheses. This approach was preferred over multiple regressions since it allows taking full advantage of repeated measures of anagrams. Using a series of anagrams for each individual increases the reliability of the overall assessment. At this point, the MLM approach allows testing the non-independence of repeated data (i.e., anagrams) and estimates variation both within and between participants besides the individual-level error term (Raudenbush & Bryk, 2002).

In all models, maximum likelihood (ML) estimation was used. Regulatory framing and feedback type was dummy coded before the analyses. Fixed effects and variance components effects for all models are presented in Table 2.

Table 2. Results of MLM Analyses on Response Time at Post-feedback

		Model 1	Model 2	Model 3	Model 4
Fixed Components					
Intercept	γ_{00}	6.98**	8.31**	8.33**	8.15**
Time 1	γ_{40}		.03	.03	.03
Promotion Emotions	γ_{50}				.03
Prevention Emotions	γ_{60}			-.05	
Framing	γ_{10}		-2.16**	-2.16**	-2.24**
Feedback	γ_{20}		-2.06**	-2.08**	-1.86*
Framing*Feedback	γ_{30}		2.13*	2.13*	2.22**
Random variance		5.19**	4.11**	4.10**	4.03
Error variance		1.82	1.83	1.83	1.83
Deviance		2350.76	2333.49	2333.42	2331.92

* p < .05, ** p < .001

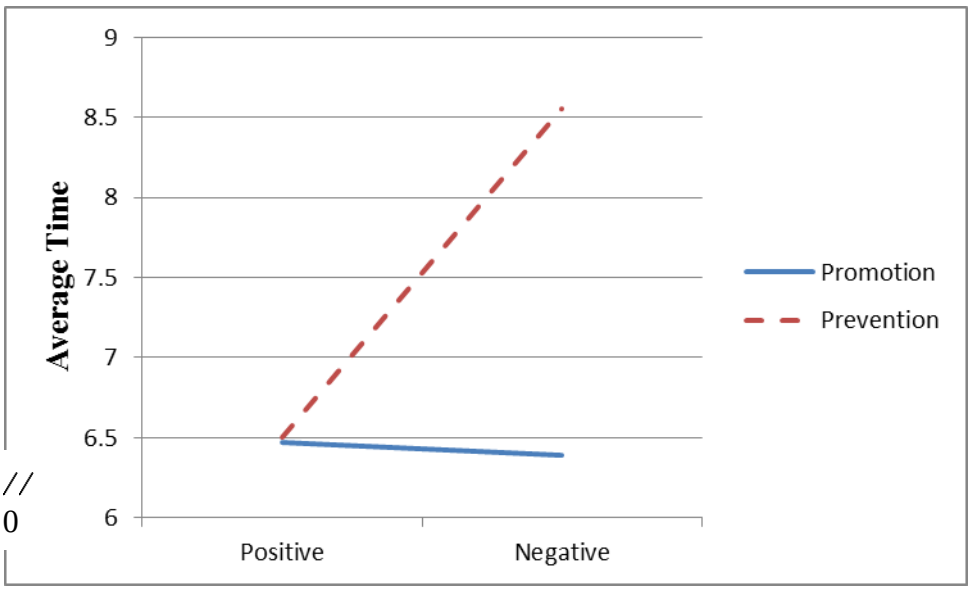
Results of the first model revealed that grand mean of transformed response time for the whole sample was γ00 = 6.98 (t (100) = 29.76, p = .001). Furthermore, the variance of random intercept (u_{0j}) was 5.19 and it was significantly different from zero (*Wald* = 6.68, p <.001), showing that participants differed from each other on average response time on anagrams.

Results of the null model also indicated the degree of nonindependence of outcome variable, namely response time, across level-1 unit anagrams. Nonindependence was tested using intra-class correlation (ICC) and calculated via random variance (u_{0j}) divided by the total variance. Consequently, ICC for the null model was .74 (5.19/7.01) implying that 74 % percent of the overall variance can be explained by level-2 variation in the participants.

In the second model, the main predictor variables and their interaction were added to the model to predict this variation. The difference between two models with a 4 parameter change was yielded a significant improvement ($\Delta\chi^2$ (4) = 17.27, p < .01). Results of fixed effects revealed a significant main effect for framing (β_{1j} = -2.16, p < .001). Main effect of feedback also yielded significant results (β_{2j} = -2.06, p < .001). Finally, the interaction term between framing and feedback had a significant effect on response time (β_{3j} = 2.13, p < .001).

Further analysis to explore the nature of interaction effects yielded significant results only for prevention focus framing. As depicted in Figure 1, there was a relationship between feedback valence and persistence on the anagrams in the prevention primed group. Accordingly, those who received negative feedback had higher levels of persistence than those who received positive feedback. Type of feedback had no effect on response time for the promotion focus primed participants. In the third and fourth model, results showed that neither promotion-related nor prevention-related emotions had a significant impact on the response times ($t < 1.96$).

Figure 1. Plotting the Interaction between Framing and Feedback on Response Time



Overall, these results indicated that basic premises of the RFT were partially supported. As expected, fit experience via prevention focus and negative feedback increased the motivation. However, results failed to support the premise on the fit between promotion focus and positive feedback.

Research on the basic premises of RFT has been criticized for the potential limitations in its methodology (Watling, Driessen, Vleuten, Vanstone, & Lingard, 2012). Accordingly, the majority of the previous studies, including the current one, were conducted in the controlled laboratory settings by using cognitive tasks such as anagram solving. This type of investigation might have limitations due to the lack of relevance to real-life settings. Interestingly, among the studies investigating the effects of feedback on regulatory orientations, only Van-Dijk and Kluger (2004) found full support for all of the hypothesized effects. Furthermore, their study is the only one that used a scenario, based on a real-life setting. Thus, it can be proposed that there might be a gap between cognitive tasks and real-life tasks, which requires further clarification. Besides, a recent meta-analysis showed that regulatory fit framing studies yield heterogenous effects as a result of complex methods to create regulatory fit (Chen & Bei, 2017).

This gap may also arise from the gained experience during the goal-pursuit process in real-life settings. For instance, it was proposed that emotions, as input information during the goal-pursuit, have a long-term effect in which the pursuer learns how to act in response to the specific conditions rather than a short-term immediate effect (Baumeister, Vohs, DeWall, &

Zhang, 2007). Therefore, this may be the reason underlying the mixed findings. Individuals might respond to real-life feedback by using a different set of schema based on their experience as compared to the cognitive tasks used in the lab condition. The second study aimed to rule out the limitations of such cognitive tasks by using a scenario-based procedure on a real-life multiple goal-pursuit situation.

Study 2

The second study aims to extend the findings of the first study in several ways. First, how fit and non-fit situations primed via feedback valence influence resource allocation in a multiple-goal context, was tested for the first time. Second, a real-life context was used to increase the generalizability of the findings. Third, the feedback magnitude was set around the mid-point (i.e., 48%) of goal completion for both positive and negative feedback to better test the effects of feedback valence. This procedure will help to rule out the possible confounding effects of the magnitude of feedback. Finally, unrelated studies paradigm rather than ambient framing was used in the second study to prime regulatory orientations.

Method

Participants

One hundred and forty-two participants were recruited for the study. The majority of the participants were female (*N* = 119, 83.8 %). The average age of the participants was 20.91 (*SD* = 1.64, Range = 19-30).

Material

In order to manipulate regulatory orientations, an essay writing session was administered before the experimental sessions. This procedure was derived from the Selves Questionnaires and various forms have been used in the literature (e.g., Dholakia, et. al., 2006; Liberman, Molden, Idson, & Higgins, 2001). Participants were led to think about their concerns that were related to either promotion (e.g., hopes, aspirations) or prevention (e.g., duties, obligations) focus. Afterward, they were instructed to list at least five of their concerns and write an essay on how those concerns changed and developed during their lives. An essay was deemed as adequate if it is consisted of at least five sentences.

Participants then fulfilled the manipulation check questions followed by the time and effort allocation questions on each goal.

Procedure

A 2 (promotion; prevention focus) X 2 (positive; negative feedback) between subjects design with effort (time that the participants were willing to spend on the alternative course) as the dependent variable was used. At the beginning of the study, participants were told that they are going to attend two unrelated studies in order to keep them unaware of the true nature of the manipulation. A confederate experimenter conducted the first –manipulation- part of the study. In the first part of the study, participants were assigned one of the two regulatory focus manipulations as used in previous studies (e.g., Liberman, Molden, Idson, & Higgins, 2001). In promotion priming, participants described their current hopes and aspirations and how they differed from their hopes and aspirations as they were growing up. In the prevention, priming condition participants described their current duties and obligations and how they differed from their duties and obligations as they were growing up. There was no time constraint during the writing session.

Next, participants were asked to imagine a scenario in which they considered a multiple goal-pursuit situation. Accordingly, participants were told they have exams on two

must courses scheduled on the same day, three days from the experiment date. The goal of the participant described as taking the highest grade possible from both exams. Both of the exams were defined as similar in importance and as highly desired end-states. Instructions also emphasized the neutral nature of tasks in terms of their being ideal-ought goals or eager-vigilant frames. The rest of the survey referred to only one of these goals as focal goal in which participants received reedback.

To manipulate feedback, a flowchart was represented at first page of the questionnaire depicting the materials that they have already covered (to-date) or that they have yet to cover (to-go) similar to the Koo and Fishbach's (2008) study. The bar chart contains an arrow showing the progress. Bar represents the total amount of work (100%) and the arrow represents the current level which was 48% for all conditions.

In the positive feedback condition; arrow was colored from starting point to the current point to emphasize the successful attainment, whereas arrow was colored from current state to the endpoint to emphasize unattained part of the task in the negative feedback condition.

Next, to measure motivation to study for the exams as the dependent measure, participants were asked to indicate the amount of time they would spend studying for the exam for three days over maximum 18 hours.

For manipulation checks, mood scale used in the Study 1 was administered. Besides, because RFT assumes that fit effect is different from outcome value, the desirability of the tasks was also asked. By doing so, the value of outcome effects against fit effects emerging from feedback was controlled for. Furthermore, attractiveness of each goal taken from Shah and Higgins (1997; e.g., "How good would be if you attained your goal of XXX?), and level of goal competition (Emmons & King, 1998; e.g., Does working on the 'focal goal' have a helpful, a harmful, or no effect at all on your 'alternative goal') were reported. Furthermore, the participant indicated a sign of the feedback on an 11-point Likert scale (-5= negative; 5=positive). Finally, goal type was assessed for each goal in terms of their ideal or ought qualities ("Some goals involve pursuing something we wish, whereas others involve pursuing something we have to." "How would you describe your goal for task XXX?) on a 10-point scale (1= ideal; 10= ought). It was expected that goals are perceived as similar in importance, attractiveness, and content but competing. Moreover, it was expected that to-go feedback is perceived as negative and to-date feedback was perceived as positive. Participants were debriefed using funneled debriefing technique to test whether they are suspicious about the true nature of the study. All manipulation check questions revealed expected results on dependent variable.

Results and Discussion

Means and standard deviations based on the priming and feedback were presented in Table 3.

Table 3. Means and Standard Deviations for Resource Allocation

	Focal Goal				Alternative Goal			
Frame	Promotion		Prevention		Promotion		Prevention	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Feedback								
Positive	7.97	2.42	6.19	2.28	8.73	2.42	10.33	2.99

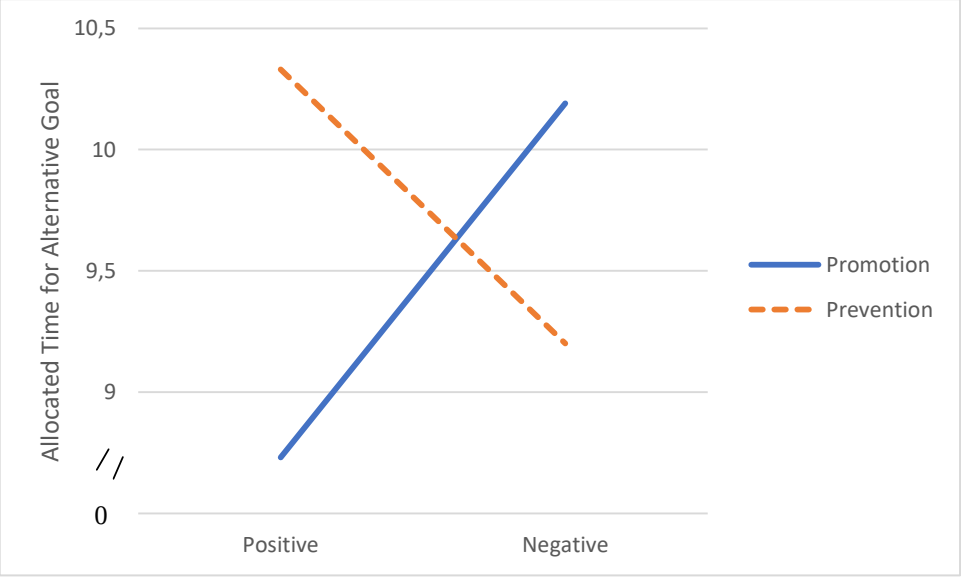
Negative	6.81	2.14	7.89	2.14	10.19	2.75	9.20	2.59

ANOVA results on time spent for an alternative goal showed no significant main effects for both manipulations. However, the interaction effect was significant (F (1, 136) = 7.84, p < .05). Further analyses to explore the nature of interaction term showed that promotion primed participants allocated more time on the alternative course when they receive negative feedback (M = 10.19, SE = .46) than they receive positive feedback (M = 8.73, SE = .48). For prevention primed participants, however, the effect showed a trend (F (1, 136) = 3.02, p < .08). As depicted in Figure 2, prevention primed participants allocated more time to the alternative goal when they received positive feedback on focal goal (M = 10.33, SE = .46) than negative feedback (M = 9.20, SE = .46).

Table 4. Results of the ANOVA on Allocated Time on Focal and Alternative Goal

	Allocated time for alternative goal		
	F	*p*	Eta squared
Framing	.433	.511	.003
Feedback	.129	.720	.001
Framing*Feedback	7.84	.006	.054

Figure 2. Plotting the Interaction between Framing and Feedback on Alternative Goal Time



Results showed that the fit between regulatory orientations and feedback valence led to an increase in the motivation on the alternative goal, which was depicted by increased allocated time. Therefore findings of the current study supported the hypotheses. Specifically, results supported both cybernetic models and attitude research on feedback effects on multiple goal-pursuit. On the one hand, in line with the cybernetic models' propositions (Carver & Scheier, 1998), participants allocated more resources to the alternative goal after positive feedback only under prevention non-fit condition and allocated more resources to the focal goal after negative feedback only under prevention fit condition. On the other hand, in

accordance with the attitude research (e.g., Fishbach et al., 2009), participants allocated more resources to the alternative goal after negative feedback only under promotion non-fit condition and allocated more resources to focal goal after positive feedback only under promotion fit condition. Hence, regulatory fit theory shed some light on the controversial propositions on how feedback valence influences resource allocation under multiple goal-pursuit.

Fit effects obtained in the current study are similar to the effects of self-efficacy on goal-pursuit from a control theory perspective (Vancouver, Thompson, & Williams, 2001). Accordingly, goal-pursuers are expected to allocate more resources to the goal that have the highest self-efficacy attributions. Similarly, the fit experience might have created a sense of control and mastery feelings based on the feeling right experience during the goal-pursuit, which in turn, leads to increased resource allocation.

Increased motivation under regulatory fit has also implications for successful self-regulation. In all conditions, participants allocated more effort to the alternative goal that had no progress information. Since half of the work had completed on the first goal, it seems that allocating more resources to the alternative goal is a better strategy in terms of successful self-regulation. Therefore, it can be concluded that both fit and non-fit conditions have similar self-regulatory success at least for the current study, but they have different preferences on the weighting resource allocation. However, since only imagined resource allocation was measured rather than actual motivation, further studies are needed to clarify self-regulatory success under (non) fit conditions.

On the one hand, increased motivation under fit conditions has a potential to increase the likelihood of successful attainment. Since, increased motivation on one goal due to the feeling right experience would lead to shielding that focal goal against alternative goals. Such shielding is one of the factors that increase the successful goal attainment (Kuhl & Beckmann, 1994). On the other hand, increased motivation because of the fit might cause rumination especially on the unattainable goals (Jostmann & Koole, 2009). Fit experience occurs when self-regulatory orientation and the mean or manner of goal pursuit matches independent from the outcome itself. Therefore, goal-pursuer might fail to detect the probability of successful attainment.

General Discussion

The objective of the study was to examine the moderating role of the regulatory fit on resource allocation under multiple goal-pursuit situations. Results showed that regulatory fit (non-fit) moderates the effects of feedback on resource allocation. In general, feedback valence compatible with the self-regulatory orientation led to the allocation of resources on the focal goal at least for prevention focus (Study 1) whereas incompatible feedback led to the allocation of resources to the alternative goal, especially for promotion focus (Study 2). Specifically, first study showed increased motivation -for prevention focus- under regulatory fit in a single goal context. Furthermore, second study expanded basic premises of motivation-goal literature to multiple goal environment by testing the motivation on the alternative goal and provided evidence that regulatory non-fit on focal goal led to heightened motivation on the alternative goal especially for promotion focus.

Two studies were conducted to further our understanding of the dynamic self-regulation under different goal-pursuit environments. Initial evidence was provided on the resource allocation to multiple active goals in the context of self-regulatory fit and non-fit. Moreover, the current study contributed to current literature in explaining the controversial and/or mixed findings for feedback effects. Regulatory fit as a moderating factor sheds light on the effects of positive and negative feedback on motivation. Thus, these studies

highlighted the importance of goal-pursuer's experience in response to environmental factors such as feedback and multiple active goals.

Current research was the first attempt to explore the effects of the interaction between regulatory orientation and feedback valence on the resource allocation under multiple goal-pursuit. Further attempts are required to increase the generalizability of the findings. Furthermore, exploring mediating factors such as goal commitment and goal expectancy is important to extend our understanding of the dynamic resource allocation process. Especially, whether or not these resource allocation preferences result in a successful self-regulation is an important remaining question. Since the fit experience are assumed to occur outside of the awareness of the goal-pursuer and independent from outcome valence (Higgins, 2000), it might lead to misevaluation of the likelihood of successful attainment. That is, 'feeling right' experience might lead to overestimating the probability of goal attainment. Thus, it is important to reexamine these effects under the conditions in which the assessment of self-regulation success is available. Furthermore, recent research on multiple goal pursuit identified other factors such as different deadlines for active goals (Ballard, Vancouver, & Neal, 2018), and perceived power in terms of ability to control resources required for goal-pursuit (Schmid, 2018). Therefore, additive effects of those factors in relation with regulatory fit effects would further our understanding on dynamic resource allocation under multiple goal-pursuit situations.

Furthermore, current research adopted person-situation interaction perspective on dynamic resource allocation process. After the adoption of the cognitive perspective, motivation-goal researchers have formulized goal-pursuit process as an interaction between goal pursuer and the environment (Bargh & Huang, 2009). However, research on dynamic self-regulation under multiple goal- pursuit context have been heavily focused only on one side of the process. Characteristics of the goal-pursuer have been misrepresented in the research focusing on the effects of the environmental factors such as feedback (e.g., Carver & Scheier, 2000). Furthermore, environmental cues have not been integrated into the research focusing on the effects of the goal pursuer's qualities such as self- efficacy (e.g., Bandura, 1991). In this study, the interaction between goal-pursuer's qualities regarding the self-regulatory orientations and the environmental factors as feedback valence was integrated to further explore the dynamic resource allocation process under multiple goal-pursuit conditions. Thus, how environmental cues interact with the qualities of goal-pursers have the potential to shed light on the dynamic self-regulation. Shah and his colleagues (2009) have defined the concept of 'margins of opportunity' considering the environmental circumstances on goal attainment. Integrating how these opportunities are perceived and reacted might provide additional knowledge (Shah, Hall, & Leander, 2009).

Results also shed some light on the potential hierarchy between self-regulatory orientations. Considering the results of the first study, it can be concluded that providing security, which is regulated by prevention orientation, might precede promotion orientation under multiple goal-pursuit situations especially under lower motivational conditions as non-fit. Thus, maintaining vigilance on security by allocating resources was preferred overturning to advancement after successful progress. "Loss looms larger effect" characterized by greater concern for loss than gain might play a role on this strategy (see Kahneman & Tversky, 1979). Thus, all else being equal, prevention goals seem to attract more resources than promotion goals but under low motivation only.

As an important limitation, both studies were conducted with small sample sizes which might lead to impaired statistical power. Therefore, results, to some extent, might suffer from sample characteristics. Hypotheses should be tested again on high-powered samples to increase validity of the results. High-powered replications are especially important

considering the replication crisis in psychology. In recent years, many research findings including motivation-goal research failed to replicate previous findings (e.g., Summerville and Roese, 2008). First study partially failed to replicate previous findings, therefore new data using high-powered samples would further our understanding on the relationship between motivational states and effort. In addition, second study was one of the first attempts to test fit effects under multiple goal pursuit, thus, further replication studies are required so that the findings of the current research is validated.

Results have important implications for education, work, and health settings. Goal setting using promotive ideals and preventive oughts, and the way of providing feedback for those goals have the potential to influence resource allocation. Creating a more facilitating atmosphere for goal-pursuit such as regulatory fit might improve learning and performance. Feeling right experience and control effectiveness can increase resource allocation on the focal goal leading to successful attainment. For instance, health goals such as quitting smoking generally framed in terms of prevention goal via highlighting its threat to life. Under such circumstances, positive feedback (i.e., remaining abstinent) has the potential to decrease motivation and in turn, it leads to higher levels of relapse. Framing goals and providing feedback accordingly might increase successful attainment to those goals.

Furthermore, identifying self-regulatory success under (non) fitting multiple goal-pursuit conditions is the next critical step. The current study has provided the first-hand knowledge on the fit effects on resource allocation strategies. However, whether these strategies are effective for successful attainment of all aspects of goal-pursuit await further investigations.

Compliance with Ethical Standards

Ethical Approval

Ethical approval for the data was granted by the Middle East Technical University Scientific Research and Publications Ethics Committee. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all individual participants included in the study.

Conflict of Interest

Authors declare that they have no conflict of interest.

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